

AMENDED SET OF CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An isolated mutant water-soluble glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme, wherein said mutant is a mutant of a glucose dehydrogenase comprising the amino acid sequence of SEQ ID NO:1, and wherein said mutant ~~comprises one or more amino acid substitutions~~ consists of an amino acid substitution selected from the group consisting of:

(1) glutamine at position 192 (168th glutamine of SEQ ID NO:1) is substituted with glycine, glutamic acid, leucine, phenylalanine, serine or aspartic acid in SEQ ID NO:1, optionally combined with (a) a substitution wherein aspartate at position 167 (143rd aspartate of SEQ ID NO:1) is substituted with glutamic acid in SEQ ID NO:1 or (b) a substitution wherein asparagine at position 452 (428th asparagine of SEQ ID NO:1) is substituted with threonine in SEQ ID NO:1;

(2) leucine at position 193 (169th leucine of SEQ ID NO:1) is substituted with alanine, glycine, methionine, tryptophan or lysine in SEQ ID NO:1, optionally combined with (a) a substitution wherein aspartate at position 167 (143rd aspartate of SEQ ID NO:1) is substituted with glutamic acid in SEQ ID NO:1 or (b) a substitution wherein asparagine at position 452 (428th asparagine of SEQ ID NO:1) is substituted with threonine in SEQ ID NO:1; and

(3) aspartate at position 167 (143rd aspartate of SEQ ID NO:1) is substituted with glutamic acid in SEQ ID NO:1, and asparagine at position 452 (428th asparagine of SEQ ID NO:1) is substituted with threonine in SEQ ID NO:1.

2-23. (Cancelled).

24. (Previously Presented) A glucose assay kit comprising the modified glucose dehydrogenase as claimed in claim 1.

25. (Previously Presented) A glucose sensor comprising the modified glucose dehydrogenase as claimed in claim 1.

26. (Previously Presented) The mutant glucose dehydrogenase as claimed in claim 1, wherein glutamine at position 192 (168th glutamine of SEQ ID NO:1) is substituted with glycine, glutamic acid, leucine, phenylalanine, serine or aspartic acid in SEQ ID NO:1.

27. (Previously Presented) The mutant glucose dehydrogenase as claimed in claim 1, wherein leucine at position 193 (169th leucine of SEQ ID NO:1) is substituted with alanine, glycine, methionine, tryptophan or lysine in SEQ ID NO:1.

28. (Previously Presented) The mutant glucose dehydrogenase as claimed in claim 1, wherein aspartate at position 167 (143rd aspartate of SEQ ID NO:1) is substituted with glutamic acid in SEQ ID NO:1, and asparagine at position 452 (428th asparagine of SEQ ID NO:1) is substituted with threonine in SEQ ID NO:1.

29-32. (Cancelled).

33. (New) The mutant glucose dehydrogenase as claimed in claim 1, wherein glutamine at position 192 (168th glutamine of SEQ ID NO:1) is substituted with glycine, glutamic acid, leucine, phenylalanine, serine or aspartic acid in SEQ ID NO:1, and aspartate at position 167 (143rd aspartate of SEQ ID NO:1) is substituted with glutamic acid in SEQ ID NO:1.

34. (New) The mutant glucose dehydrogenase as claimed in claim 1, wherein glutamine at position 192 (168th glutamine of SEQ ID NO:1) is substituted with glycine, glutamic acid, leucine, phenylalanine, serine or aspartic acid in SEQ ID NO:1, and asparagine at position 452 (428th asparagine of SEQ ID NO:1) is substituted with threonine in SEQ ID NO:1.

35. (New) The mutant glucose dehydrogenase as claimed in claim 1, wherein leucine at position 193 (169th leucine of SEQ ID NO:1) is substituted with alanine, glycine, methionine, tryptophan or lysine in SEQ ID NO:1 and aspartate at position 167 (143rd aspartate of SEQ ID NO:1) is substituted with glutamic acid in SEQ ID NO:1.

36. (New) The mutant glucose dehydrogenase as claimed in claim 1, wherein leucine at position 193 (169th leucine of SEQ ID NO:1) is substituted with alanine, glycine, methionine, tryptophan or lysine in SEQ ID NO:1 and asparagine at position 452 (428th asparagine of SEQ ID NO:1) is substituted with threonine in SEQ ID NO:1.

37. (New) An isolated mutant water-soluble glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme, wherein said mutant is a mutant of a glucose dehydrogenase comprising the amino acid sequence of SEQ ID NO:1, and wherein said mutant comprises an amino acid substitution wherein glutamine at position 192 (168th glutamine of SEQ ID NO:1) is substituted with glycine, glutamic acid, leucine, phenylalanine, serine or aspartic acid in SEQ ID NO:1.